

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

This Document contains information affecting the National Defense of the United States, within the meaning of Title 18, Sections 793 and 794, of the U.S. Code, as amended. Its transmission or revelation of its contents to or receipt by an unauthorized person is prohibited by law. The reproduction of this form is prohibited.

SECRET

25X1

25X1A

COUNTRY East Germany
SUBJECT Physical Research in East Germany

REPORT NO.
DATE DISTR. 28 July 1953

NO. OF PAGES 5

REQUIREMENT NO. RD

REFERENCES

25X1A

25X1

EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

25X1X

25X1X

1. The 1952 meeting of German physicists held in Berlin from 28 September to 3 October 1952 was attended by more than 500 East German physicists. Of the speeches made at the meeting, one given by Dr. G. Heber of Jena entitled the "New Aspects of the Quantum Theory of Ferromagnetism" attracted considerable attention.
2. The following information was obtained on the use of soft magnetic materials: The production of Mu-metals for transformer sheets (Uebertragerbleche), a Fe-Ni alloy with small admixtures, was gradually gaining momentum. The best sheets were produced at the Hettstedt plant, inferior sheets at the Auerhammer plant. Development and testing were done by the Institute for Magnetism in Jena, the Institute for Materials Research (Werkstoffkunde) of the Polytechnic Academy in Dresden, and by the Central Telecommunications Laboratory of the VVB RFT in Berlin-Treptow. High quality alloys, such as the super alloy or the 5,000 Z with hysteresis loop, were apparently, not produced. Fe-Si transformer sheets produced by the Thale plant continued to be inferior by normal western standards. The RFT Telecommunications Plant in Treptow expected early delivery of a ferrometer ordered in West Germany. The ferrometer was to be used to measure the development of sheets more accurately. The production of ferrite cores for coils and transformers was being continued at the Hescho-Kahla Ceramics Plant in Hermsdorf. The domestic production of carbonyl iron powder in the Leuna Plant had started almost on schedule and was expected to eliminate a very serious shortage in East Germany. The quantities produced would meet requirements for pupin, filter, choke coils, etc., as soon as the usual initial difficulties had been overcome. The development of test instruments for these materials had progressed to the point when devices suitable for all required frequencies had been completed or would be available within a few months, especially for gauging losses at the cores of coils in the frequency range of certain cycles to certain kilocycles. The delivery of rolling, smelting, and annealing installations for the institute of Professor Eisenkolb in Dresden was said to have been considerably delayed. There were additional difficulties in the supply to this institute.

SECRET

25X1A

18-118111

25X1A

SECRET

- 2 -

3. The following information was obtained on the production of hard magnetic materials (permanent magnetic alloys):
The Werra Plant in Immelborn² continued to produce sinter magnets; the Bitterfeld Combine continued to produce cast permanent magnets. The quality of the products of both plants was frequently unsatisfactory. The use of nickel for the production of radio sets had allegedly been prohibited just prior to 3 October 1952. Ferrite permanent magnets (Ferrooxydure) were produced as a substitute. The Hescho-Kahla Ceramics Plant began production of this substitute material with quick initial success, according to publications of the Krupp and Philipps firms. However, the use of these oxide materials without nickel requires the redesigning and enlarging of the loudspeaker system. The development of the finest powder magnets (Feinstpulvermagnet) according to Neel was proceeding successfully in the Magnet Institute in Jena. It was hoped to test the products shortly.
4. The rough brickwork of the second and third buildings of the Research Institute for Magnetic Materials (Forschungsinstitut fuer Magnetische Werkstoffe) (FMW) in Jena had been completed. Prior to 3 October 1952, a speech was made by Professor Barkhausen (fnu) during a ceremony celebrating the end of the construction work. Large funds were said to be available for the complete and modern equipment of this institute. The initial allocation for the construction of the FMW was allegedly 2,000,000 eastmarks. The workshop has been in operation since early in 1952. During the past three years the scientists assigned to the institute, most of whom were young, has made remarkable progress which would be of great value to East German industries. Several institute publications had been edited or were being printed.
5. The management of the Physics Institute in Jena had been taken over by Professor Dr. Wilhelm Schuetz who had returned from Ostashkov. He had also attempted to obtain control of the new and adjacent Magnet Institute (FMW). The technical equipment of the Institute for Technical Physics, headed by Professor Alfred Eckhardt had been considerably improved.³ Additional building plans for substantial expansion of the Physics Institute were being worked out. The vacant area next to the FMW and the Physics Institute had been provided as the building site. Experimental work on cyclotrons (Elektronen-schleuder) according to the impulse principle (Stossprinzip) of the Philipps firm had progressed under the able management of Physicist Henze (fnu). Research work was being done on a 9 mega electron volt apparatus and on a very small 2 mega electron volt cyclotron. The latter was allegedly to be used for the operation of X-ray tubes for hard rays. A double focusing mass-spectrograph according to Mattach and Herzog was further improved. The attached laboratory for electron-microscopy was put into operation under the management of Professor Eckhardt and Physicist Rambusch (fnu). Research was first done with the old Ruska microscope. The delivery time for the new Zeiss-Jena microscope was said to have been approximately two years. The laboratory was excellently installed in the Abbeum Institute. There was also a working relationship with Professor Dr. Hans Knoell of the Jenapharm Plant. Instruments for the testing of photographic emulsions were further improved in the observatory headed by Professor Lambrecht. These instruments were to be used increasingly for East German research and industries.

25X1X 6. Professor Karl Haufler⁴ headed a very successful institute. He moved with his institute from Greifswald to Berlin. 25X1

7.

25X1A Comments:

- 25X1 1. Not further identified
2. VEB Hartmetallwerk Immelborn VVB Werkin, Immelborn, Thuringia.

25X1A 3. Comment: The equipment of the Jena Physics Institute may now be superior to that of most West German institutes.

SECRET

Next 2 Page(s) In Document Exempt